

Respiratory Health Program

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Respiratory Health Program works with a diverse range of partners in industry, labor, trade associations, professional organizations, academia, and other governmental agencies. The program focuses on:

- Protecting workers from respiratory diseases that are caused or made worse by work exposures
- Improving workers' respiratory health

What do we do?

The program works with partners to conduct research, share information, provide services, and transfer research findings into practice. Listed below are key program activities.

- Providing summaries of national data tracking the burden of work-related respiratory disease and the types and amounts of hazardous workplace respiratory exposures.
- Providing health screening and surveillance services to U.S. coal miners under a program mandated by Federal law called the Coal Workers' Health Surveillance Program (CWHSP). We help individual miners by detecting disease early and provide group data to guide broader prevention activities.
- Conducting multidisciplinary research needed to identify respiratory hazards; characterize

their risks; and design, validate, and disseminate effective interventions.

- Contributing to the NIOSH Health Hazard Evaluation (HHE) Program by responding to U.S. workplace requests for evaluations of potential respiratory hazards and providing recommendations for solutions.
- Certifying courses that train technicians to perform spirometry (a type of lung function testing).
- Providing training and certification testing to physicians who classify chest x-rays for findings of pneumoconiosis (a chronic lung disease caused by inhaling dust) using the International Labour Organization's classification system.

What have we accomplished?

- Collaborated with state public health departments and academic investigators to report [an outbreak of silicosis](#) among engineered stone countertop workers in four states and further disseminated information for prevention in an infographic available in [English](#), [Spanish](#), and [Chinese](#).
- [Reported](#) a cluster of five young nonsmoking workers at an industrial equipment manufacturing facility with an unusual lung disease causing bronchiolitis and emphysema.
- Developed a model for work information in electronic health records (EHRs) called Occupational Data for Health and achieved publication by Health Level Seven International (HL7®), an important standard-setting organization.
- [Identified](#) potential occupational carcinogens released during vat polymerization additive manufacturing processes.
- Provided 7,559 miners with chest x-rays, re-viewed 2,799 spirometry test results, and provided a report to Congress on potential barriers to miners' participation in the CWHSP.
- Participated in CDC's 2019 response to the outbreak of e-cigarette, or vaping, product use associated lung injury, or EVALI.
- Reported HHEs on key contemporary work-related respiratory health issues such as [exposure to styrene during ultraviolet cured-in-place pipe installation](#) and [evaluation of exposures and health effects in fire fighters after a chemical fire](#).

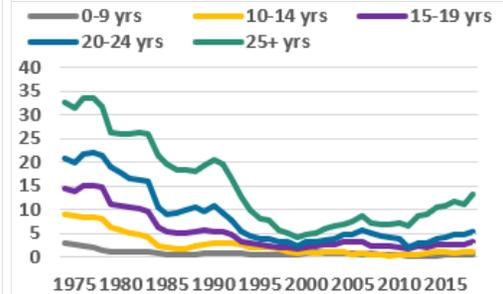
What's next?

- Evaluate potentially hazardous exposures and workers' respiratory health in a variety of settings, including workers installing trenchless cured-in-place pipes using water and steam technologies, workers in coffee roasting and packaging facilities, and coal miners.
- Engage clinical organizations to pilot the collection and use of work information in EHRs.
- Respond to the Coronavirus Disease 2019 pandemic, helping to ensure safe U.S. work-places and prevent SARS-CoV-2 infections among workers.
- Implement updates to training and certification testing using the International Labour Organization's system to classify chest x-rays for changes of pneumoconiosis.
- Update training materials for technicians performing spirometry to reflect recent changes to recommendations from several professional organizations.

At-A-Glance

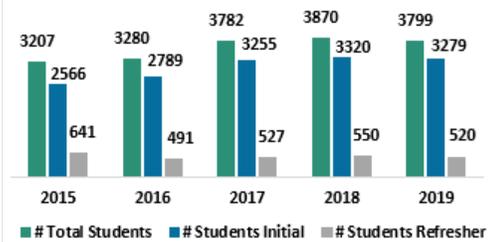
The Respiratory Health Program mission is to provide national and international leadership to prevent work-related respiratory diseases and improve workers' respiratory health. This snapshot shows recent accomplishments and upcoming projects.

Percentage of examined underground miners with coal workers' pneumoconiosis (ILO category 1/0+) by tenure in mining, 1974-2018*



Source: Coal Workers' Health Surveillance Program
* Percentages are 5-year moving averages.

Number of spirometry training course attendees, 2015-2019



Source: NIOSH Spirometry Training Program

Infographic Spotlight

Inhaling Silica Dust Can Cause Deadly Lung Disease

Crystalline silica is found in granite, artificial/engineered stone, and other stone products.

When workers cut, grind, drill, or polish these materials, very small particles of crystalline silica dust get in the air.

Breathing in these very small (respirable) crystalline silica particles can cause irreversible scarring in the lungs, trouble breathing, permanent disability, and death.

Crystalline silica dust can also cause lung cancer, kidney damage, and autoimmune disease.

Employers Must Ensure that Workers are Protected from Exposure to Crystalline Silica

- Minimize exposures through effective engineering controls and work practices.
- Provide and ensure proper use of respirators until exposures are reduced below the PEL or if exposures cannot be reduced with engineering controls and work practices.
- Provide initial and periodic medical examinations to exposed workers.
- Train workers on the health hazards, workplace exposures, measures implemented to protect workers, and their roles in protection.

Assess employee exposures to crystalline silica dust to assure they are not above the Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) of 50 µg/m³, averaged over an 8-hour work day.

Go to www.osha.gov/dsg/topics/silicacrystalline/ for more information.

Learn more about worker exposures to silica at the NIOSH Crystalline Silica web page.